

## CHAPTER V

### CONCLUSIONS

According to stoichiometry of barium chromate formation, the equilibrium precipitation with barium chloride could be approximately 90 % chromate removal. It also reached 99 % when the ratio of barium to chromate was up to two, in particular at a high QUAT concentration. However, the removal efficiency depended on the concentration ratios of barium to chromate, chromate to QUAT and concentration of QUAT. The results showed that high concentration of barium was required for an effective precipitation of chromate in order to compete with QUAT and barium for chromate. From an economic viewpoint, more barium excess was not necessary for precipitation because it might be useless barium after the concentration of chromate was constant. Similarly, the complete barium chromate precipitation had occurred before.

The data could be used with other results, i.e. polyelectrolyte-enhanced ultrafiltration (PEUF), to perform optimization calculation in the future. Furthermore, these results, being an equilibrium control condition, indicated the maximum (thermodynamic) separation efficiency to compare dynamic crystallizer results.